

**ATHS FC – Math Department Al Ain**

|  |  |  |  |
| --- | --- | --- | --- |
| **Grade/Cluster** | **11 core** | **Date** | **6.5 to 6.8** |
| **Name** |  | **ID** |  |

Q-1 Choose the correct answer:

1. What must be true in order for a term *x* −*a* to be a factor of a polynomial

f(x)?

A. f (a) = 0

B. *f* (*a*) must be negative

C. *f* (*a*) must be positive

D. *a* must be positive

b) State the number of positive real zeros for the polynomial

*f* (*x*) = *x*3 + 4*x*2 + *x* + 5

A. 2

B. 3

C. 0

D. 1

c) Find the value of k so that the remainder of

is 5

A. 3

B. -5

C. -1

D. 9

d) What is the remainder of 2*x*2 −33*x* +16 when divided by *x* −16 ?

A. -1

B. 1

C. 0

D. 1

Q-2 Write the expression in quadratic form: x6 + 2x3 – 5

Q-3 Show that x – 3 is a factor of x 3 +4 x 2 - 15 x – 18 then find the remaining factors of the polynomial

Q-4 State the number of positive real zeros, negative real zeros, and imaginary zeros of the function f (x ) = x3 − 6x2 +1. (3 marks)

Q-5 Find all of the zeros of each function (7 marks)

Q-6 ***Application in ZOOLOGY:*** A species of animal is introduced to a small

island. Suppose the population of the species is represented by

*P* (*t* ) = −*t* 4 + 9*t*2 + 400 where t is the time in years. Determine when the

population becomes zero